

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
11 April 2002 (11.04.2002)

PCT

(10) International Publication Number
WO 02/29077 A3

(51) International Patent Classification⁷: C12P 7/02.
B01D 15/08

(21) International Application Number: PCT/IB01/01827

(22) International Filing Date: 3 October 2001 (03.10.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2000/5371 3 October 2000 (03.10.2000) ZA

(71) Applicants (for all designated States except US): AECI LIMITED [ZA/ZA]; First Floor, AECI Place, 24 Woodlands, Woodlands Drive, Woodmead, 2128 Sandton (ZA). BOARD OF SUPERVISORS OF LOUISIANA STATE UNIVERSITY AND AGRICULTURAL AND MECHANICAL COLLEGE [US/US]; Louisiana Agricultural Center, Post Office Box 25055, Baton Rouge, LA 70894 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): VAN WALSEM, Hendrik, Johan [ZA/US]; 303 Third Street, Cambridge, MA 02142-1126 (US). SASKA, Michael [US/US]; 4735 Hyacinth Avenue, Baton Rouge, LA 70808 (US).

(74) Agents: DYER, Alison, Margaret et al.; Spoor and Fisher, PO Box 41312, 2024 Craighall (ZA).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
30 May 2002

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 02/29077 A3

(54) Title: METHOD OF PREPARING A MODIFIED CORN STEEP LIQUOR PRODUCT

(57) Abstract: A method of preparing a modified corn steep liquor product from a corn steep liquor which includes suspended solids, high molecular weight compounds, phytic acid, and metal values includes the steps of: subjecting the corn steep liquor to ultrafiltration to remove the suspended solids and high molecular weight compounds; treating the product of step (a) with a phytase enzyme to convert the phytic acid to inositol-mono-phosphate; treating the product of step (b) with an acid phosphatase enzyme to convert the inositol-mono-phosphate to myo-inositol; adjusting the pH of the product of step (c) to from 7 to 9 inclusive using a soluble base which causes most or all of the Mg values to precipitate, and removing the precipitate; and contacting the product of step (d) with a strong acid cation chromatographic resin to produce a first fraction containing most of the remaining metal values, and a second fraction containing most of the myo-inositol, the second fraction being the modified corn steep liquor product.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB 01/01827

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 C12P7/02 B01D15/08

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 IPC 7 C12P B01D A23J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data, BIOSIS, FSTA

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	PATENT ABSTRACTS OF JAPAN vol. 1998, no. 08, 30 June 1998 (1998-06-30) & JP 10 075795 A (OJI KOONSUTAAC KK), 24 March 1998 (1998-03-24) abstract ----	1,5,6
A	EP 0 321 004 A (ALKO LTD ;DORR OLIVER INC (US)) 21 June 1989 (1989-06-21) claims ----	1,5,6
A	US 5 626 847 A (AGRAWAL PRAMOD ET AL) 6 May 1997 (1997-05-06) claims ----	1,5,6 -/-



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

° Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

& document member of the same patent family

Date of the actual completion of the international search

Date of mailing of the international search report

13 March 2002

28/03/2002

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl.
Fax: (+31-70) 340-3016

Authorized officer

Grittern, A

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB 01/01827

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DATABASE WPI Section Ch, Week 199305 Derwent Publications Ltd., London, GB; Class D16, AN 1993-040510 XP002193003 & JP 04 365489 A (MITSUI TOATSU CHEM INC), 17 December 1992 (1992-12-17) abstract ---	1,5,6
A	GB 740 205 A (CORN PROD REFINING CO) 9 November 1955 (1955-11-09) the whole document ---	
P,A	RANE K D ET AL: "MEMBRANE FILTRATION OF CORN STEEP WATER" CEREAL CHEMISTRY, AMERICAN ASSOCIATION OF CEREAL CHEMISTS. MINNEAPOLIS. US, vol. 78, no. 4, July 2001 (2001-07), pages 400-404, XP001039223 ISSN: 0009-0352 the whole document -----	1-4

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IB 01/01827

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
JP 10075795	A 24-03-1998	NONE		
EP 0321004	A 21-06-1989	NL 8702735 A	16-06-1989	
		AT 71811 T	15-02-1992	
		CA 1296668 A1	03-03-1992	
		CN 1033925 A , B	19-07-1989	
		DE 3868032 D1	05-03-1992	
		EP 0321004 A1	21-06-1989	
		ES 2028263 T3	01-07-1992	
		FI 884046 A , B,	18-05-1989	
		JP 1281048 A	13-11-1989	
		JP 2589560 B2	12-03-1997	
		KR 124792 B1	27-11-1997	
		MX 26691 A , B	01-06-1993	
		PH 24663 A	07-09-1990	
		PT 88316 A , B	01-09-1988	
		SU 1829959 A3	23-07-1993	
		US 4914029 A	03-04-1990	
		ZA 8805074 A	29-03-1989	
US 5626847	A 06-05-1997	NONE		
JP 4365489	A 17-12-1992	NONE		
GB 740205	A 09-11-1955	NONE		